

Abstract

A fuse link redundancy structure to implement redundant circuits within an integrated circuit has an insulating layer over a conductive layer of the fuse link is sufficiently thin and transparent to allow destruction of the conductive layer by an intense laser light. The redundancy structure has a fusible link formed of a layer of a conductive material deposited upon an insulating layer such as field oxide on the semiconductor substrate and connected between the redundant circuits and other circuits present on the integrated circuit. The layer of conductive material is either formed of a metal such as Aluminum or Tungsten, a heavily doped polycrystalline silicon, or an alloy of a metal such as Tungsten and a heavily doped polycrystalline silicon. A hard mask layer is placed upon the layer of conductive material during transistor processing to protect the layer of conductive material during formation of self-aligned sources and drains of transistors of the integrated circuit. The hard mask layer is removed from the layer of conductive layer for deposition of interlayer dielectric layers on the semiconductor substrate to improve a fuse destruction to implement the redundant circuits. An opening is formed in the interlayer dielectric layers to thin the interlayer dielectric layers to allow exposure of the layer of conductive material to facilitate destruction of the layer of conductive material.